

## ABSTRACT OF THE DISCLOSURE

A compact and lightweight electric generator for portable power applications employs a new engine design and integration approach for reducing engine and generator weight. A unique flywheel alternator generates electrical power and provides inertia for the engine, pressurized air for cooling, and inertia for the alternator. An engine cowling provides rotating component protection, a fan shroud mechanism, cooling air ducts, and a cooling mechanism for handling large quantities of heat produced by rectified power conversion.